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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,140	01/14/2002	Norio Taniguchi	36856.598	6862

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Keating & Bennett LLP
Suite 312
10400 Eaton Place
Fairfax, VA 22030

EXAMINER

SUMMONS, BARBARA

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,140

Applicant(s)

TANIGUCHI, NORIO

Examiner

Barbara Summons

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Maintained Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-19 are rejected under 35 U.S.C. § 102(b) as being anticipated by Ushiroku et al. U.S. 6,137,380 (of record) for reasons of record repeated below.

Figs. 4, 5, and 38 of Ushiroku et al. disclose a surface acoustic wave (SAW) ladder filter circuit 21 comprising: a piezoelectric substrate 22; a plurality of parallel arm resonators (23, 25, 27) and a plurality of series arm resonators (24, 26); a plurality of inductors respectively connected in series to the plurality of parallel arm resonators (i.e. the inductors are the bond wires in Fig. 38 as best seen in Fig. 39); wherein the parallel arm resonators include a first parallel arm resonator (i.e. 23 and/or 27) connected to one of the input and the output of the filter, and a second parallel arm resonator 25 connected to a junction between two series arm resonators; the parallel arm resonators inherently has a capacitance proportionally related a product of the number of electrode finger pairs and the overlap length of the electrode fingers (see other prior art of record as evidence of the inherency), wherein the first parallel arm resonator (e.g. 23) has a capacitance C_{p1} proportional to $50 \times 60 = 3000$ (see col. 7, Table 1) and the second parallel arm resonator 25 has a capacitance C_{p2} proportional to $120 \times 120 = 14400$ so that $C_{p1} \times 2 < C_{p2}$; and wherein the inductor represented by

bond wire 155c (Fig. 38), which is connected to the second parallel arm resonator 25 and to package electrode 143c, has an inductance that is substantially equal to or less than the inductance of the inductors connected to the first parallel arm resonator 23 because bond wire 155c is necessarily shorter than any of the other bond wires connecting the first parallel resonators to the package electrodes (see also claims 3, 8, and 11).

Regarding claims 4, 9, and 12, one end of the second parallel arm resonator 25 is electrically connected to at least two ground electrode pads (143c and 144a). Regarding claims 2 and 7, the resonance frequency of the second parallel resonator 25 [i.e. related to the interdigital transducer (IDT) wavelength see col. 7, Table 1] is lower than the resonance frequency of the first parallel resonator 23 because the IDT wavelength of the second parallel arm resonator is longer. Regarding claims 5, 10, and 13-17, the SAW ladder filter is itself a communication apparatus, and it is a bandpass filter (see e.g. col. 1, Ins. 13-14). Regarding claim 6, C_{p1} proportional to 3000 and C_{p2} proportional to 14400, equates to C_{p2} being approximately $4.8 \times C_{p1}$, and therefore less than $C_{p1} \times 10$. Regarding claims 18 and 19, there are two first parallel resonators 23 and 27 connected to the input and output of the filter device with the second parallel arm resonator 25 disposed between them.

Allowable Subject Matter

3. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 9/11/03 have been fully considered but they are not persuasive.

Applicant's arguments are based on the last paragraph of the claim regarding the inductance of the inductors connected to the parallel arm resonators. Although Applicant agrees that bonding wire 155c is shorter than the bonding wires 155a and 155b..." (see page 13, lines 3-4 of the amendment received 9/11/03), Applicant argues that the Examiner's position that the "inductor represented by bond wire 155c (Fig. 38), which is connected to the second parallel arm resonator 25 and to package electrode 143c, has an inductance that is substantially equal to or less than the inductance of the inductors connected to the first parallel arm resonator 23 because bond wire 155c is necessarily shorter than any of the other bond wires connecting the first parallel resonators to the package electrodes" (see page 12, the next to last paragraph of the amendment) is incorrect because the inductor connected to the second parallel resonator includes "two bonding wires 155c and 155d, NOT merely one bonding wire 155c" (see page 13, lines 1-3 of the amendment). This argument is unpersuasive because it is not commensurate with the scope of the claims. The claims do not state that the inductor connected to the second parallel resonator must be a total equivalent inductor/inductance of all bonding wires connected thereto. Applicant's argument requires the Examiner to read a limitation into the claim that is not specifically recited. Therefore, the Examiner made a proper rejection of the claims, as recited, by choosing one of the plurality of inductors connected to the second parallel resonator that has an inductance substantially equal to or less than the inductance of the inductor connected

to the first parallel arm resonator. Furthermore, if the Examiner were to consider the total equivalent inductance of all of the inductors connected to each parallel resonator, they would meet the limitations of "substantially equal to" since Ushiroku et al. discloses the total equivalent inductances connected to all of the parallel resonators to be the same value of L_c (see col. 20, lines 13-15 and Fig. 39 which is equivalent to Fig. 38).

Applicant then argues, "Ushiroku et al. fails to teach or suggest anything at all about the relative inductances of the inductor connected to the second parallel arm resonator and...to the first parallel arm resonator" and requests the Examiner provide evidence of the "substantially equal to or less than" relationship of those inductances (see page 13, the last two paragraphs of the amendment). The argument is unpersuasive because Ushiroku et al. does itself disclose, and provide evidence of, the relationship of these inductances L_c of the total equivalent inductors connected to the parallel resonators, as being "substantially equal to..." since all of the inductances L_c are equal (see Ushiroku col. 20, lines 13-15).

The remaining arguments are based upon Ushiroku et al. not disclosing the inductor connected to the second resonator being "equal to or less than" the inductor connected to the first resonator (see page 14, the first and second full paragraphs of the amendment), which is clearly not persuasive since Ushiroku et al. explicitly discloses the inductance of each total equivalent inductor connected to the parallel resonators all having the "substantially equal" value L_c (col. 20, lines 13-15).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (703) 308-4947. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



bs
December 1, 2003

BARBARA SUMMONS
PRIMARY EXAMINER